ASAP!

Ship Rec 3rd

Item ID:	D3021-043		Accept	*N900040100*	Setup	Start	*NS1*
Revision ID:						Stop	*NS2*
Item Name:	Tube Assembly						

Start Date:	11/27/13	Start Qty:	2.00	*2*	Cust Item ID:
Required Date:	12/11/13	Req'd Qty:	2.00	*2*	Customer:

Reference:

				Run	Start	*NR1*
Approvals:	Process Plan: MLJ Date: 13-11-27	Tooling: _____ Date: _____				
	QC: _____ Date: _____	SPC (Y/N): _____ Date: _____		Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
D3021	B								*13-12-03*
100		0.00							
100	Large Fab						2		*Joe*
Large Fab		0.00							
Large Fab	Memo								
	1-Cut tube as per Dwg D3021								
	2-Drill tube as per Dwg D3021 using DT8622								
	3-Deburr								
	4-Weld stud and end cap as per Dwg D3021 QSI004 A/R 4130 Rod Batch: m11875								
110	QC9- Inspect visual per QSI004- Fusion Welds	0.00							
110						② 13-12-03			DAS 9
QC	Memo	0.00							9-89
Quality Control									

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: _____ Date: _____ Work Order update only ☐

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. _____	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
NCR No. _____	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design ☐									
Doc/Data ☐									
Equip/Tooling ☐									
Handling/Pre ☐									
Material ☐									
Operator ☐									
Offset/Setup ☐									
Process ☐									
Supplier ☐									
Training ☐									
Transport ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function

☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence

☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge

☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled

☐ Other

_____
_____
_____

Item ID:	D3021-043			Accept	*N9000040100*	Setup	Start	*NS1*
Revision ID:							Stop	*NS2*
Item Name:	Tube Assembly							
Start Date:	11/27/13	Start Qty:	2.00	*2*	Cust Item ID:			
Required Date:	12/11/13	Req'd Qty:	2.00	*2*	Customer:			
Reference:								

						Run	Start	*NR1*
Approvals:	Process Plan: _____	Date: _____	Tooling: _____	Date: _____			Stop	*NR2*
	QC: _____	Date: _____	SPC (Y/N): _____	Date: _____				

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							DAS 9
	Memo	0.00				②	~~B-O~~	13.12-03	9-89
130 *130* Powdercoat Powder Coating	Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3 *M125028*	0.00							
	Memo	0.00				2	∅	13-12-3	DAS 34
	*** MASK THREAD PRIOR TO POWDERCOAT***								9-89
	START TIME: *10.30* OVEN TEMPERATURE: *520°* FINISH TIME: *10.5d.*								
140 *140* QC Quality Control	QC3- Inspect Part Finish	0.00							DAS 27 9-89
	Memo	0.00	*13/12/3*			②			

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: _____ Date: _____   Work Order update only ☐

Work Order: _____	**DISPOSITION**		**AGAINST DEPARTMENT/PROCESS**			
Part No. _____	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐	
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	
NCR No. _____	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐		

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design ☐									
Doc/Data ☐									
Equip/Tooling ☐									
Handling/Pre ☐									
Material ☐									
Operator ☐									
Offset/Setup ☐									
Process ☐									
Supplier ☐									
Training ☐									
Transport ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear
- ☐ Bending
- ☐ Centre Not Concentric
- ☐ Cracks
- ☐ Crimp/Kink/Ripple/Wave
- ☐ Cuffs
- ☐ Crushing
- ☐ Heat Treat
- ☐ Inspection Strip in Tube
- ☐ Marks/Chatter
- ☐ Turning Sequence
- ☐ Wave/Twist in Tube

General
- ☐ Bend
- ☐ BOM/Route
- ☐ Broken/Damage/Defect
- ☐ Burrs
- ☐ Contamination
- ☐ Countersink
- ☐ Cut Too Short
- ☐ Drawing
- ☐ Drill Holes
- ☐ Finish
- ☐ Fit/Function

- ☐ Folio/Program
- ☐ Grain
- ☐ Hardware
- ☐ Inspection Incomplete/Unqualified
- ☐ Instructions Incomplete/Unclear
- ☐ Misaligned/off center
- ☐ Mislabeled
- ☐ Misread
- ☐ Off-set
- ☐ Out of Calibration
- ☐ Out of Sequence

- ☐ Outside Dimensions
- ☐ Over/Under tolerance
- ☐ Part Incorrect
- ☐ Part Lost/Missing
- ☐ Part Moved
- ☐ Positioned Wrong
- ☐ Power Loss/Surge

- ☐ Pressure/Forced
- ☐ Set-up
- ☐ Temperature/Cure
- ☐ Weld
- ☐ Wrong Stock Pulled
- ☐ Other

_____
_____
_____

| Item ID: | D3021-043 | | | Accept | *N9000040100* | Setup | Start | *NS1* |

Revision ID:

Item Name: Tube Assembly   Stop   *NS2*

| Start Date: | 11/27/13 | Start Qty: 2.00 | *2* | | Cust Item ID: |
| Required Date: | 12/11/13 | Req'd Qty: 2.00 | *2* | | Customer: |

Reference:

     Run   Start   *NR1*

Approvals: Process Plan: _____   Date: _____   Tooling: _____   Date: _____

          QC: _____   Date: _____   SPC (Y/N): _____   Date: _____   Stop   *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* Packaging Packaging	Identify as per dwg & Stock Location Memo *PPP109724.*	0.00 0.00				2x		13-12-3	OAS 26 9-89
160 *160* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00						13/12/4	

W13-12.04

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: _____ Date: _____   Work Order update only ☐

Work Order: _____	**DISPOSITION**	**AGAINST DEPARTMENT/PROCESS**			
Part No. _____	Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐	Engineering ☐ Quality ☐ Other ☐
NCR No. _____					

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design ☐									
Doc/Data ☐									
Equip/Tooling ☐									
Handling/Pre ☐									
Material ☐									
Operator ☐									
Offset/Setup ☐									
Process ☐									
Supplier ☐									
Training ☐									
Transport ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function

☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence

☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge

☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

_____
_____
_____

Picklist Print

November-27-13 7:44:58 AM

Work Order ID: 109718

109718

Parent Item: D3021-043

D3021-043

Parent Item Name: Tube Assembly

Start Date: 11/27/13   **Required Date:** 12/11/13

Start Qty: 2.00   **Required Qty:** 2.00

Comments: IPP REV:A 12.06.11 NEW ISSUE DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3017-11		Manufactured	No			100	Each	70.0000	1	2			
D3017-11 Cap									**			13-11-28	

Location	Loc Qty	Loc Code
WA001	70	
104954	30	
106668	40	

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4667-041		Manufactured	No			100	Each	0.0000	1	2			
D4667-041 Armrest Stud Assembly									**			13-12-02	
M4130NT0.750W.049		Purchased	No		109720	100	f	272.6252	2.325	5	2		
M4130NT0 750W 049 4130 RD Tube .750 x.049W									**			13-11-28	

Location	Loc Qty	Loc Code
MAT033	272.6251893	
123339	2.1217893	
125252	12.7164	
125313	91.614	
m127111	166.173	

6.

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: _____ Date: _____   Work Order update only ☐

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. _____	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
NCR No. _____	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design ☐									
Doc/Data ☐									
Equip/Tooling ☐									
Handling/Pre ☐									
Material ☐									
Operator ☐									
Offset/Setup ☐									
Process ☐									
Supplier ☐									
Training ☐									
Transport ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Folio/Program	☐ Outside Dimensions	☐ Pressure/Forced
☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance	☐ Set-up
☐ Cracks	☐ Broken/Damage/Defect	☐ Hardware	☐ Part Incorrect	☐ Temperature/Cure
☐ Crimp/Kink/Ripple/Wave	☐ Burrs	☐ Inspection Incomplete/Unqualified	☐ Part Lost/Missing	☐ Weld
☐ Cuffs	☐ Contamination	☐ Instructions Incomplete/Unclear	☐ Part Moved	☐ Wrong Stock Pulled
☐ Crushing	☐ Countersink	☐ Misaligned/off center	☐ Positioned Wrong	
☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Power Loss/Surge	☐ Other
☐ Inspection Strip in Tube	☐ Drawing	☐ Misread		
☐ Marks/Chatter	☐ Drill Holes	☐ Off-set		
☐ Turning Sequence	☐ Finish	☐ Out of Calibration		
☐ Wave/Twist in Tube	☐ Fit/Function	☐ Out of Sequence		

ITEM	QTY -041	P/N	DESCRIPTION
	X	D3021-041	TUBE ASSEMBLY
1	1	D3021-1	TUBE
2	2	D3017-11	END CAP

109718 MCS
13-11-27

2 PL

D3021-041 TUBE ASSEMBLY

24 90
9.983
5.800
0.376
2.900

Ø0.191 THRU
TYP

SYM ABOUT
℄
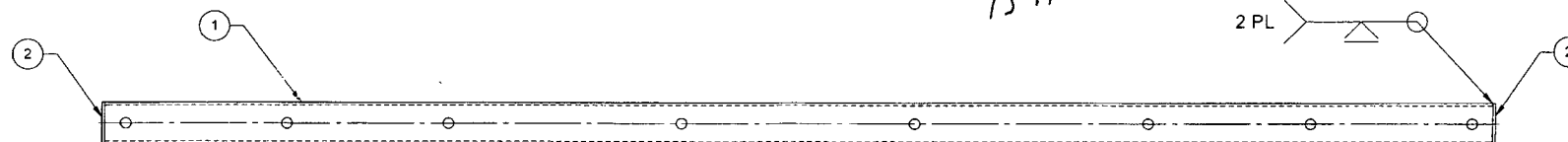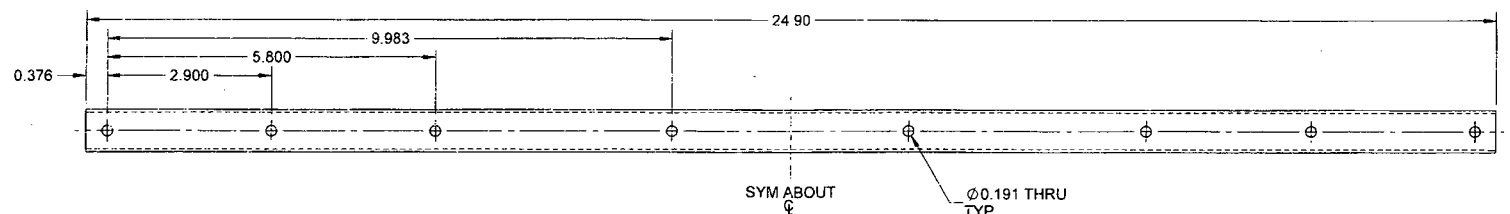
D3021-1 TUBE

NOTES:
1) MATERIAL -041: N/A
   -1: AISI 4130N SEAMLESS STEEL TUBING, Ø0.750 X 0.049 WALL
        PER MIL-T-6736 OR AMS 6371/6360/6361/6362/6373/6374
        REF M4130NT0.750W.049
2) FINISH: POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3021-041" AND B/N "BXXXXX"
        PER DART QSI 044 6.1 (FINE POINT MARKER)
7) WEIGHT: 0.77 lbs

B	REFORMAT, ADDED -043 & -3		AJS	12.06.12
A	NEW ISSUE		CP	01.05.18
REV.	DESCRIPTION		BY	DATE

DESIGN	CP	**DART AEROSPACE LTD**	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3021	SHEET 1 OF 2
APPROVED		TITLE	SCALE
DE APPR.		TUBE ASSEMBLY	NTS
DATE 12.06.12			

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: _____ Date: _____   Work Order update only ☐

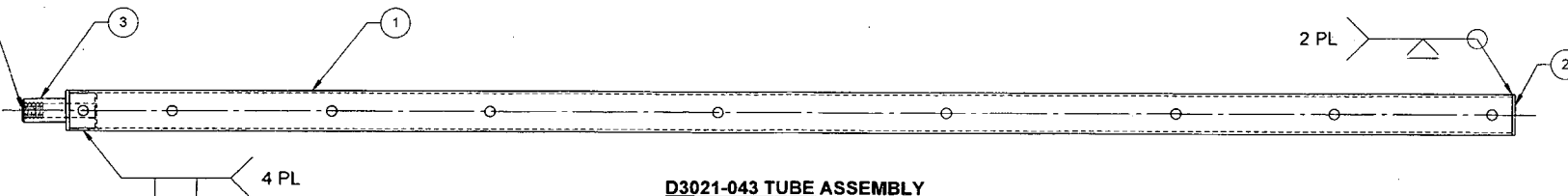| Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. _____	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
NCR No. _____	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐	

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Folio/Program	☐ Outside Dimensions	☐ Pressure/Forced
☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance	☐ Set-up
☐ Cracks	☐ Broken/Damage/Defect	☐ Hardware	☐ Part Incorrect	☐ Temperature/Cure
☐ Crimp/Kink/Ripple/Wave	☐ Burrs	☐ Inspection Incomplete/Unqualified	☐ Part Lost/Missing	☐ Weld
☐ Cuffs	☐ Contamination	☐ Instructions Incomplete/Unclear	☐ Part Moved	☐ Wrong Stock Pulled
☐ Crushing	☐ Countersink	☐ Misaligned/off center	☐ Positioned Wrong	
☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Power Loss/Surge	☐ Other
☐ Inspection Strip in Tube	☐ Drawing	☐ Misread		
☐ Marks/Chatter	☐ Drill Holes	☐ Off-set	_____	
☐ Turning Sequence	☐ Finish	☐ Out of Calibration	_____	
☐ Wave/Twist in Tube	☐ Fit/Function	☐ Out of Sequence	_____	

ITEM	-043 QTY	P/N	DESCRIPTION
	X	D3021-043	TUBE ASSEMBLY
1	1	D3021-3	TUBE
2	1	D3017-11	END CAP
3	1	D4667-041	ARMREST STUD ASSY

MASK THREAD PRIOR TO POWDER COAT

③ ①

2 PL

②

4 PL

D3021-043 TUBE ASSEMBLY

26.40

1.88   9.983   4.18 REF   9.983

0.25   5.800   5.800   0.38

2.900   2.900

A

A

Ø0.191 THRU TYP

D3021-3 TUBE

90°

Ø0.191 REF

SECTION A-A
SCALE 2X

RELEASED
2012-07-09
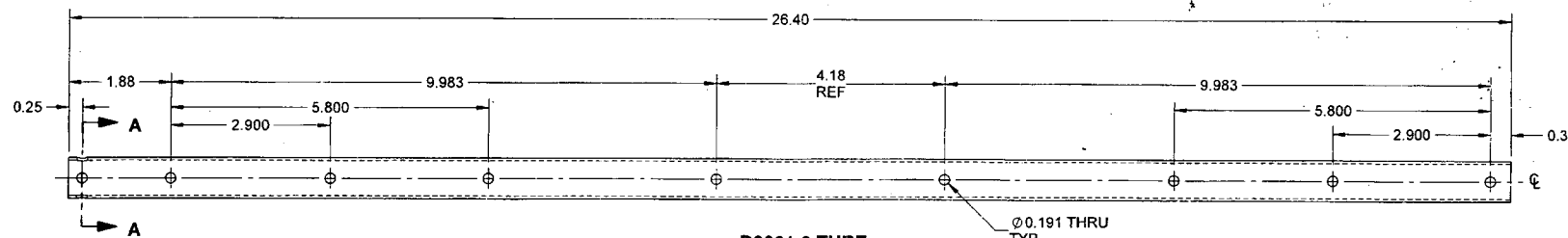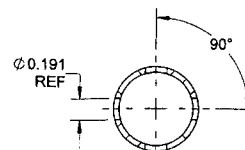
NOTES:
1) MATERIAL -043: N/A
   -3: AISI 4130N SEAMLESS STEEL TUBING, Ø0.750 X 0.049 WALL
   PER MIL-T-6736 OR AMS 6371/6360/6361/6362/6373/6374
   REF M4130NT0.750W.049
2) FINISH: POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3021-043" AND B/N "BXXXXX"
   PER DART QSI 044 6.1 (FINE POINT MARKER)
7) WEIGHT: 0.88 lbs

		DART AEROSPACE LTD	
DESIGN	AJS	HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS	DRAWING NO.	REV. B
CHECKED		D3021	
MFG. APPR.			SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		TUBE ASSEMBLY	NTS
DATE	12.06.12		

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: _____ Date: _____   Work Order update only ☐

Work Order: _____	**DISPOSITION**	**AGAINST DEPARTMENT/PROCESS**

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION
- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS
- Skid-tube ☐
- Machining ☐
- Thermoforming ☐
- Large Fab ☐
- Crosstube ☐
- Small Fab ☐
- Finishing ☐
- Composite ☐
- Water Jet ☐
- Prod. Eng. Coor. ☐
- Rec/Store/Packaging ☐
- Supplier ☐
- Engineering ☐
- Quality ☐
- Other ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear
- ☐ Bending
- ☐ Centre Not Concentric
- ☐ Cracks
- ☐ Crimp/Kink/Ripple/Wave
- ☐ Cuffs
- ☐ Crushing
- ☐ Heat Treat
- ☐ Inspection Strip in Tube
- ☐ Marks/Chatter
- ☐ Turning Sequence
- ☐ Wave/Twist in Tube

General
- ☐ Bend
- ☐ BOM/Route
- ☐ Broken/Damage/Defect
- ☐ Burrs
- ☐ Contamination
- ☐ Countersink
- ☐ Cut Too Short
- ☐ Drawing
- ☐ Drill Holes
- ☐ Finish
- ☐ Fit/Function

- ☐ Folio/Program
- ☐ Grain
- ☐ Hardware
- ☐ Inspection Incomplete/Unqualified
- ☐ Instructions Incomplete/Unclear
- ☐ Misaligned/off center
- ☐ Mislabeled
- ☐ Misread
- ☐ Off-set
- ☐ Out of Calibration
- ☐ Out of Sequence

- ☐ Outside Dimensions
- ☐ Over/Under tolerance
- ☐ Part Incorrect
- ☐ Part Lost/Missing
- ☐ Part Moved
- ☐ Positioned Wrong
- ☐ Power Loss/Surge

- ☐ Pressure/Forced
- ☐ Set-up
- ☐ Temperature/Cure
- ☐ Weld
- ☐ Wrong Stock Pulled
- ☐ Other

_____
_____
_____